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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------------------------------------------------------------|-------------|----------------------|-----------------------------|------------------|
| 10/789,003 | 02/27/2004 | Hiroshi Miyawaki | NY-KIT-365-US | 6887 |
| 24972 | 7590 | 08/09/2005 | | |
| FULBRIGHT & JAWORSKI, LLP 666 FIFTH AVE NEW YORK, NY 10103-3198 | | | EXAMINER LEE, GUNYOUNG T | |
| | | | ART UNIT 2875 | PAPER NUMBER |

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,003

Applicant(s)

MIYAWAKI ET AL.

Examiner

Gunyoung T. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Yazawa et al. (US 5,870,128).

3. In regards to claim 1 and 2, Yazawa et al. disclose a light emitting device assembly having:

- A substrate formed of aluminum metal having high heat conductivity (Fig. 2(II), 7) (col. 3, lines 37-39);
- A plurality of light emitting diodes (LED's) (Fig. 2(II), 1);
- A plurality of chip resistors (Fig. 1, 4) (col. 3, lines 25-28);
- Wherein the chip resistors (Fig. 1, 4) are inherently generating heat while the power is being supplied to the chip resistors;
- wherein the plural LED'S (Fig. 1, 1) are arranged in the form of an array on the substrate and a plurality of the chip resistors (4) are arranged linearly along the array of LED's (1).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yazawa et al. (US 5,870,128) as applied to claim 1 above.

7. In regards to claim 3, Yazawa et al. disclose:

- An insulating layer (Fig. 2(II), 3) formed on the base (7);
- A bonding wiring (Fig. 1, 6).

8. Yazawa et al. do not expressly disclose:

- A printed circuit formed on the top face of the insulating layer;

- A solder bonding to fix the chip resistors to the printed circuit.

9. However, Yazawa et al. disclose that the chip resistor (Fig. 1, 4) are electrically connected to the driver **integrated circuits (ICs)** (Fig. 1, 2) (col. 3, lines 25-28) which are mounted on the top face of the insulating layer (Fig. 1, 3). It is well known in the art at the time of the invention to use a solder bonding for mounting a resistor on a circuit board for excellent electrical conductivity and for a rigid metal bonding at a relative low melting temperature which avoid any possible damage to the neighboring components on the circuit.

10. In regards to claim 4, it has been held that the recitation that an element is "adapted for" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

11. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the light emitting device of Yazawa et al. to irradiate at least three kinds of beams of red, green and blue, to provide light with different wave lengths or at different frequencies.

12. In regards to claim 5, claim 5 is drawn to means corresponding to the apparatus of claim 1-3. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to control the light emission by controlling the level and the

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timing of the power supplied to the resistors (Fig. 1, 4) using the integrated circuits (ICs) (Fig. 1, 2).

13. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yazawa et al. (US 5,870,128) as applied to claim 1 above, and further in view of Ryan (US 2004/0120156).

14. In regards to claims 6-7, Yazawa et al. disclose the invention substantially as claimed except for:

- A thermal sensor (thermistor) to determine the temperature of the substrate;
- A radiator thermally coupled with the substrate;
- A fan for feeding cooling air to the radiator.

In regards to the thermal sensor, radiator and fan, Ryan discloses a LED lighting assembly having:

- A thermal sensor (thermistor) (Fig. 1, 9) (p. 4, paragraph 63, lines 1-3) to determine the temperature of the substrate (11) (p. 4, paragraph 62, lines 7-10);
- A radiator (Fig. 1, 3) coupled (2, 7) with the substrate (11);
- A fan for feeding cooling air to the radiator (p. 3, paragraph 49, lines 6-10).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the thermal sensing and control system of Ryan for the light emitting device of Yazawa et al. to keep the temperature of the substrate within an optimal range to provide a uniform illumination.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sawase et al. (US 5,150,016) show a LED light source having: a plurality of LEDs (Fig. 3, D1-D4); a linear array of resistors (R1-R6); a wire bonding (W); a printed circuit (11, 12, 13, 15, 16) and a substrate (col. 3, lines 40-41). Newman et al. (US 4,896,168) show a light emitting diode print head having: a plurality of LEDs (Fig. 1, 26); a circuit board (54); a substrate (14, 12); cooling fins (38); and a thermal sensor (thermistor) to measure the temperature and heating resistors (col. 5, lines 8-16).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gunyoung T. Lee whose telephone number is (571) 272-8588. The examiner can normally be reached on 7:30 - 4:00 PM.

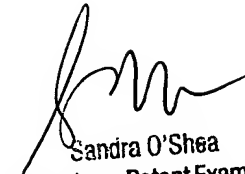
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GTL
8/5/2005



Sandra O'Shea
Supervisory Patent Examiner
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